

**REMARKS**

Claims 1 through 4, 6 through 10, 12 through 19 and 21 through 24 are pending in the application.

Claim 1 has been amended to emphasize advantageous inventive food casings that are compressed in a ratio of 100:1 or more. Support for this amendment can be found in the Application as filed, for example in Claim 2 as-filed.

Claim 2 has been canceled, as its subject matter has been incorporated into Claim 1.

Applicants respectfully submit that this response does not raise new issues, but merely places the above-referenced application either in condition for allowance, or alternatively, in better form for appeal. Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

**Perfection of Priority Claim**

As noted in Applicant's Preliminary Amendment of February 14, 2006, the present application is entitled to a priority date of August 27, 2003. Applicants will forward a certified English translation of German parent application 103 39 802.3 upon receipt, thereby making the parent application of record in accordance with 37 CFR 1.55 and perfecting the German priority date.

*The Claimed Invention is Patentable  
in Light of the Art of Record*

Claims 1 through 4, 6 through 10, 12 through 19 and 21 through 24 stand rejected in light of United States Published Patent Application No. 2003/0165645 ("US 645") to Auf der Heide in view of United States Patent No. 7,001,635 ("US 635") to Merritt et al. and United States Published Patent Application No. 2004/0062834 ("US 834") to Cruz.<sup>1, 2</sup>

It may be useful to briefly consider the invention before addressing the merits of the rejection.

Food casings, especially sausage casings, are predominantly offered in shirred form. Cellulose-based casings, such as those disclosed in US 635, are known. Shirred sticks formed from synthetic polymers are also known; however, such shirred sticks are generally not very stable without net-type or reinforcing packaging, and are thus not in widespread use. For example, heretofore known synthetic polymer-based casings exhibit a relatively high resilience, resulting in the re-expansion of the shirred stick and associated pleat loss. (In that regard, the Examiner's attention is kindly directed to the Application-as-filed on Page 2, lines 1 through 14, as well as US 834, Para. 0016, fifth sentence).

In addition to shirred pleat stability, polymer-based food casings should advantageously provide a balance of additional properties, including only modest bending of the shirred tube (thereby avoiding the conventional external reinforcement) and acceptable water vapor permeability.

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<sup>1</sup> Applicants respectfully submit that the published application US 645 has matured into United States Patent No. 6,808,771 ("US 771"). Accordingly remarks concerning US 771 are directed to US 645, as well.

<sup>2</sup> Applicants respectfully submit that cited United States Patent No. 1,001,635, entitled "Automatic Weighing and Recording Car-Scale" is to Goetz. Applicants respectfully assume that United States Patent No. 7,001,635, to Merritt et al, was intended.

Unexpectedly, Applicants have found synthetic polymeric food casings that impart a heretofore unknown balance of beneficial properties, including advantageous tensile properties and water vapor permeability.

Applicants have more particularly found that food casing consisting essentially of synthetic polymers comprising "soft" polymers selected from aliphatic polyamides and copolyamides, polyether block amides, polyurethanes and biodegradable polyesters bends under the effect of its own weight by no more than 20 % and exhibits a water vapor permeability of 20 to 1000 g/m<sup>2</sup> d, as recited in the claims.

The inventive food casings may further advantageously be compressed in a ratio of 100:1 or more, as recited in the claims as-amended.

In particularly advantageous embodiments, the inventive food casing further comprises at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment, and the resulting shirred casing extends in the longitudinal direction by no more than 10 %, as recited in Claim 22.

In additional advantageous aspects, the inventive intrinsically stable shirred food casings further include a water-soluble polymer selected from polyvinylpyrrolidone or partially or completely saponified polyvinylacetate, as recited in Claim 23.

The cited references do not teach or suggest the claimed invention.

In fact, Applicants respectfully note that US 771 does not constitute prior art against the above-referenced application. US 771 has a publication date of September 4, 2003. As noted above, the present application is entitled to a priority date of August 27, 2003. Accordingly, Applicants respectfully submit that US 771 does not constitute prior art against the above-referenced application upon perfection of the German parent priority date.

Out of an overabundance of caution, however, Applicants further respectfully make of record that US 771, considered either alone or in combination with the remainder of the cited references, does not teach or suggest the claimed invention.

US 771 is directed to frictionally tailored casings in which the surface of the casing and that of the shirred stick together have a mean surface roughness of from 0.5 to 5.0 microns. (Col. 6, lines 26 – 55). This surface roughness enables the shirred stick to be taken off the shirring rod without damage. Applicants respectfully submit that resilience is still present within the casings of US 771, thus they are not intrinsically stable and are customarily provided with a reinforcing packaging. In that regard, the Examiner's attention is kindly directed to the Application-as-filed on Page 3, lines 10 through 17, discussing EP-A 1 338 204, the European equivalent of US 771, including its need for reinforcing packaging.

US 771, directed to frictionally tailored casings, does not teach or suggest the claimed casings formed from polymer that can include polyether block amides, polyurethanes or biodegradable polyesters, much less that such casings, without separate support, possess sufficient intrinsic stability to be processed on fully automatic stuffing machines.

And US 771 most certainly does not teach or suggest that such casings, including "soft components," would bend under the effect of their own weight by no more than 20 % and exhibit a water vapor permeability of 20 to 1000 g/m<sup>2</sup> d, as further recited in the claimed invention.

US 771 likewise fails to teach or suggest that such inventive food casings further comprising at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment would result in a shirred casing extending in the longitudinal direction by no more than 10 %, as recited in Claim 22.

Nor does US 771 teach or suggest intrinsically stable shirred food casings further including a water-soluble polymer selected from polyvinylpyrrolidone or partially or completely saponified polyvinylacetate, as recited in Claim 23.

Accordingly, US 771 does not teach or suggest the claimed invention either alone or in combination with the remaining art of record, regardless of its status as prior art (which Applicants respectfully reiterate that US 771 is not prior art).

US 635 likewise fails to teach or suggest the claimed invention.

US 635 is generally directed to cellulosic casings containing liquid smoke that provide an enhanced smoky color and flavor to foods. (Col. 1, lines 6 through 10 and Col. 6, lines 9 through 24). US 635 merely generically notes that casings formed from polymeric materials may be used within its invention. (Col. 6, lines 55 – 57). US 635 applies the liquid smoke prior to or during shirring. (Col. 8, lines 27 – 34). US 635 expressly teaches the application of coatings containing an “anti-pleat lock” agent. (Col. 7, lines 1 – 5). In contrast to the inventive intrinsically stable shirred casings, US 635 further expressly teaches that its casings are treated on the inside with a shirring solution to form self-sustaining sticks. (Col. 7, lines 10 – 12 and Col. 8, line 67 – Col. 9, line 5).

US 635, directed to cellulosic casings and merely generically referencing polymeric casings, does not teach or suggest the recited food casing consisting essentially of synthetic polymers comprising aliphatic polyamides and copolyamides, polyether block amides, polyurethanes, biodegradable polyesters or mixtures thereof, much less that such a food casing bends under the effect of its own weight by no more than 20 % and exhibits a water vapor permeability of 20 to 1000 g/m<sup>2</sup> d, as recited in the claimed invention.

US 635, expressly teaching an internal shirring solution to provide self-sustaining sticks, also fails to teach or suggest the recited intrinsically stable shirred casings. The Examiner is correct in the assertion on Page 3, third full paragraph that US 635 incorporates a coating to provide self-sustaining properties. In fact, US 635 teaches the use of shirring coatings imparting “coherency” to its casings on multiple occasions.

And US 635, solely directed to liquid smoke transporting casings, can not teach or suggest such food casings compressed in a ratio of 100:1 or more, as recited in the claims as-amended. Applicants respectfully submit that US 635 applies liquid smoke prior to or during shirring, and therefore the compression ration can not be greater than 100 because the liquid smoke intended for transport into the food would have been removed, e.g. squeezed, from the casing prior to stuffing. Applicants thus respectfully submit that to modify US 635 so as to incorporate such an elevated compression ratio would render US 635 unfit for its intended purpose as a smoke-transport casing.

And US 635, teaching outer coatings that promote shirred stick expansion, most certainly does not teach or suggest that advantageous food casings further comprising at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment would result in shirred casings extending in the longitudinal direction by no more than 10 %, as recited in Claim 22. US 635 instead expressly indicates that external coatings are used to promote shirred stick extension.

Nor does US 635 teach or suggest intrinsically stable shirred food casings further include a water-soluble polymer selected from polyvinylpyrrolidone or partially or completely saponified polyvinylacetate, as recited in Claim 23.

Accordingly, Applicants respectfully submit that the claimed invention is patentable in light of US 635, considered either alone or in combination with the remaining art of record.

US 834 does not cure the deficiencies in US 635.

US 834 is generally directed to chorizo casings incorporating a silicon-based barrier control agent that purportedly provides a balance of permeability and processing. [Para. 0017]. Evidencing conventional wisdom, US 834 teaches that casings formed from conventional polyamide blends suffer from “un-shirring” prior to stuffing. US 834 goes on to note that for

those and “other reasons” polyamide casings “are not used today.” [Para. 0016]. US 834 attempts to solve the foregoing issues by incorporating a silicon-based barrier control agent, preferably a silsesquioxane. [Paras. 0017, 0018 and 0024]. In contrast to the urgings of the outstanding Office Action on Page 5, first paragraph, US 834 expressly teaches application of a cellulose ether coating inside its casings to impart casing stability. [Paras. 0033 - 0036]. In fact, US 834 particularly notes that “this coating ... provides a shirred stick that is commercially viable, that is, it is sufficiently rigid for transportation.”[Para. 0035].

US 834, requiring a silicon-based barrier control agent in its casing polymer, does not teach or suggest the recited food casing consisting essentially of synthetic polymers, much less that such casings formed from polymers including aliphatic polyamides and copolyamides, polyether block amides, polyurethanes, biodegradable polyesters or mixtures thereof would bend under the effect of their own weight by no more than 20 % and exhibit a water vapor permeability of 20 to 1000 g/m<sup>2</sup> d.

US 834, similarly expressly teaching an inner coating imparting rigidity, likewise fails to teach or suggest the recited intrinsically stable shirred casings.

And US 834, teaching that casings suffer from “un-shirring” in the absence of its required silicon agent, most certainly does not teach or suggest such advantageous food casings in which the shirred casing extends in the longitudinal direction by no more than 15 %, as recited in Claim 4.

Thus US 834 can not teach or suggest such advantageous food casings further comprising at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment and the resulting shirred casing extends in the longitudinal direction by no more than 10 %, as recited in Claim 22.

Nor does US 834, altogether silent to water soluble polymers, teach or suggest intrinsically stable shirred food casings further including a water-soluble polymer selected from polyvinylpyrrolidone or partially or completely saponified polyvinylacetate, as recited in Claim 23.

Accordingly, Applicants respectfully submit that the claimed invention is likewise patentable in light of US 834, considered either alone or in combination with the remaining art of record.

There would have been no motivation to have combined the cited references. US 771 (which Applicants submit is not prior art) is directed to frictionally tailored casings. US 635 is directed to liquid-smoke-transfer casings. US 834 is directed to casings incorporating a particular silicon-based barrier control agent. These are altogether different issues, to say the least.

However, even if Applicants had combined US 771, US 635 and US 834 (which they did not) the present invention would not have resulted.

The combination of the cited references particularly does not teach or suggest that the recited intrinsically stable food casings consisting essentially of synthetic polymers comprising aliphatic polyamides and copolyamides, polyether block amides, polyurethanes, biodegradable polyesters or mixtures thereof would bend under the effect of its own weight by no more than 20 % and exhibit a water vapor permeability of 20 to 1000 g/m<sup>2</sup> d, as recited in the claimed invention.

And the combination can not teach or suggest such food casings compressed in a ratio of 100:1 or more, as recited in the claims as-amended. Applicants respectfully reiterate that to modify US 635 so as to incorporate such an elevated compression ratio would render US 635 unfit for its intended purpose as a smoke-transport casing.



The combination also does not teach or suggest that advantageous food casings further comprising at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment would result in shirred casings extending in the longitudinal direction by no more than 10 %, as recited in Claim 22.

Nor does the combination teach or suggest intrinsically stable shirred food casings further including a water-soluble polymer selected from polyvinylpyrrolidone or partially or completely saponified polyvinylacetate, as recited in Claim 23.

Accordingly, the cited references fail to teach or suggest the claimed invention, considered either alone or in any combination.

Applicants take this opportunity to respectfully submit that the outstanding Office Action's urgings on Page 6, first full paragraph regarding the combination of the purported "stability" of US 635, the "permeability" of US 834 and "shirred casings" of US 771 is conjecture. The noted "stability" of US 635 is based on cellulosic casings having a stabilizing coating, the permeability of US 834 is imparted by a silicon-based barrier control agent incorporated into the casing, and the shirred casings of US 771 are made by matching frictional characteristics. Consequently, the combination urged within the Office Action would, at best, result in a cellulosic casing having a "base polymeric composition" including a silicon-based barrier control agent which further has particular frictional characteristics and a stabilizing coating on its inner surface.

Thus the combination of the cited references simply does not teach or suggest the recited intrinsically stable food casings consisting essentially of synthetic polymers comprising aliphatic polyamides and copolyamides, polyether block amides, polyurethanes, biodegradable polyesters or mixtures thereof, much less that such casings would bend under the effect of its own weight by no more than 20 % and exhibit a water vapor permeability of 20 to 1000 g/m<sup>2</sup> d, as recited in the claimed invention.

And the combination can not teach or suggest such food casings compressed in a ratio of 100:1 or more, as further recited in the claims as-amended.

### CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1, 3, 4, 6 through 10, 12 through 19, and 21 through 23 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,



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